

Appendix 2: Quantifying Emissions Reductions and Cost Effectiveness

a. Emission Reductions

To estimate the anticipated emission reductions from your project, use the Diesel Emissions Quantifier (DEQ) found at <http://cfpub.epa.gov/quantifier/index.cfm?action=fleet.edit>. The data you input into the Applicant Fleet Description (template provided) is the same data that should be inputted into the DEQ. For assistance getting started, please review the Step-by-Step instructions guide (<http://www.epa.gov/cleandiesel/quantifier/stepbystep.htm>) or the complete User's Guide (<http://www.epa.gov/cleandiesel/documents/420b10033.pdf>). Please note you can average certain fields together in order to minimize the number of DEQ runs required (for example, the data for a set of refuse haulers may be averaged together into one DEQ run).

IMPORTANT NOTE: Do not activate the cost-effectiveness portion of the DEQ by clicking “yes” for the question “Do you want to estimate the total cost effectiveness of the project?” found on the start-up page. There are known problems with the Total Cost Effectiveness calculation feature in the DEQ. Until these issues are resolved, it is recommended that you do not enter any funding information. You can use the instructions in section (b) below to calculate cost effectiveness outside of the DEQ.

After inputting all the necessary fleet data into the DEQ and hitting the “Quantify Emissions” button, you will be directed to an Emissions Results page. On this page, under “Summary Emissions Results,” you should retrieve the results for Lifetime Amount Reduced for each of the listed pollutants (NO_x, PM, HC, CO, CO₂) and enter these results in Section 2 of your Project Narrative Template. An example of the Emissions Results page is shown below.

Lifetime	NO _x (tons)	PM (tons)	HC (tons)	CO (tons)	CO ₂ (tons)	Diesel- Equivalent (gallons)
Baseline of Entire Fleet	60.0163	1.3924	2.2921	9.8673	9,077.5800	817,800.0000
Baseline of Engines Retrofitted	60.0163	1.3924	2.2921	9.8673	9,077.5800	817,800.0000
Percent Reduced(%)	0.0%	20.0%	50.0%	30.0%	0.0%	0.0%
Amount Reduced	0.0000	0.2785	1.1461	2.9602	0.0000	0.0000
Amount Emitted After Retrofit, Retrofitted Engines	60.0163	1.1139	1.1461	6.9071	9,077.5800	817,800.0000
Amount Emitted After Retrofit, Entire Fleet	60.0163	1.1139	1.1461	6.9071	9,077.5800	817,800.0000

b. Cost-Effectiveness

To calculate the cost-effectiveness of your project, divide the total amount of funding required for your project (this amount includes any mandatory cost-share funds required for repower or replacement projects, but does not include any voluntary cost-share funds) by the total Lifetime Amount Reduced (in tons) for each pollutant, as calculated by the DEQ. For example, using the emissions results shown in section (a) of this appendix, and assuming a total project cost of \$20,000, the cost effectiveness of each pollutant would be calculated as thus:

PM: $\$20,000 \div 0.2785\text{tons} = \$71,813/\text{ton}$

HC: $\$20,000 \div 1.1461\text{tons} = \$17,450/\text{ton}$

CO: $\$20,000 \div 2.9602\text{tons} = \$6,756/\text{ton}$

Once the results have been calculated in this manner, enter the total cost effectiveness for each of the listed pollutants (NO_x, PM, HC, CO, CO₂) in Section 2 of your Project Narrative Template.